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Amendment and Response Under 37 C.F.R. §1.116  
Serial No.: 09/888,943  
Confirmation No.: 9282  
Filed: 25 June 2001  
For: RESPIRATOR VALVE

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**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1-26. (Canceled)

27. (Currently Amended) The respirator of claim [[15]] 28, wherein the valve flap is removably attached to the valve body.

28. (Currently Amended) A respirator having a unidirectional valve, comprising:  
a face mask having at least one opening for receiving a unidirectional valve; and  
a unidirectional valve comprising:  
a valve body comprising a valve opening; and  
a valve flap having a first portion attached to the valve body and an adjacent second portion that seals the valve opening, wherein the valve flap has a curvature from [[the]] a first end to [[the]] a second end when the valve flap is not attached to the valve body, and further wherein at least a portion of the curvature of the valve flap is at least partially flattened when the valve flap seals the valve opening.

29. (Previously Presented) The respirator of claim 28, wherein the valve opening is generally planar, and wherein the valve flap curvature biases the valve flap toward the valve opening when the valve flap is attached to the valve body to seal the valve opening.

30. (Previously Presented) The respirator of claim 28, wherein the valve flap curvature biases the valve flap toward the valve opening to seal the valve opening, and wherein the bias of the

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valve flap toward the valve opening is sufficient to seal between the valve opening in any orientation of the unidirectional valve.

31. (Previously Presented) The respirator of claim 28, wherein the curvature in the valve flap comprises a constant curvature from the first end to the second end.

32. (Previously Presented) The respirator of claim 28, wherein the curvature in the valve flap varies from the first end to the second end.

33. (Previously Presented) The respirator of claim 28, wherein the face mask is formed of a filtering material.

34. (Previously Presented) The respirator of claim 28, wherein the unidirectional valve is an exhalation valve.

35. (Previously Presented) The respirator of claim 28, wherein the unidirectional valve is an inhalation valve.

36. (Previously Presented) The respirator of claim 28, wherein the valve flap further comprises a top surface, a bottom surface, at least one support element extending from the top surface of the valve flap, and wherein the at least one support element provides the curvature in the valve flap that is at least partially flattened when the valve flap seals the valve opening.

37. (Previously Presented) The respirator of claim 28, wherein the valve flap further comprises a top surface, a bottom surface, wherein the valve flap further comprises a plurality of support elements extending from the top surface, wherein each of the plurality of support elements is spaced from each adjacent support element, and wherein the plurality of support

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elements provide the curvature in the valve flap that is at least partially flattened when the valve flap seals the valve opening.

38. (Previously Presented) A respirator comprising:

a face mask comprising an opening formed therethrough; and

a unidirectional valve located over the opening in the face mask, the unidirectional valve comprising a valve flap attached to the face mask over the opening, the valve flap comprising a curvature from a first end to a second end when the valve flap is not attached to the face mask, wherein the curvature of the valve flap is at least partially flattened when the valve flap seals the opening in the face mask.

39. (Previously Presented) The respirator of claim 38, wherein the at least partially flattened curvature of the valve flap creates a bias that is substantial enough to keep the valve flap sealed over the opening in all orientations.

40. (Previously Presented) The respirator of claim 38, wherein the curvature of the valve flap comprises a constant curvature.

41. (Previously Presented) The respirator of claim 38, wherein the curvature of the valve flap varies from the first end to the second end.

42. (Previously Presented) The respirator of claim 38, wherein the opening is generally planar such that the curvature of the valve flap attached to the face mask over the opening is flattened when the valve flap seals the opening in the face mask.

43. (Previously Presented) The respirator of claim 38, wherein the face mask is formed of a filtering material.

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44. (Previously Presented) The respirator of claim 38, wherein the unidirectional valve is an exhalation valve.

45. (Previously Presented) The respirator of claim 38, wherein the unidirectional valve is an inhalation valve.

46. (Previously Presented) The respirator of claim 38, wherein the valve flap further comprises a top surface, a bottom surface, and at least one support element extending from the top surface of the valve flap, wherein the at least one support element provides the curvature in the valve flap that is at least partially flattened when the valve flap seals the opening.

47. (Previously Presented) The respirator of claim 38, wherein the valve flap further comprises a top surface, a bottom surface, wherein the valve flap further comprises a plurality of support elements extending from the top surface, wherein each of the plurality of support elements is spaced from each adjacent support element, and wherein the plurality of support elements provide the curvature in the valve flap that is at least partially flattened when the valve flap seals the valve opening.

48. (Canceled)

49. (Currently Amended) The respirator of claim 28, wherein the valve flap comprises a cantilevered valve flap, and wherein the first portion of the valve flap is attached to the [[frame]] valve body outside of the valve opening.

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50. (Previously Presented) The respirator of claim 38, wherein the valve flap comprises a cantilevered valve flap, and wherein the first end of the cantilevered valve flap is attached to the face mask.

51. (New) A respirator including a unidirectional valve, the respirator comprising:  
a face mask; and  
a unidirectional valve attached to the face mask over an opening formed through the face mask, wherein the unidirectional valve comprises:  
a valve body comprising a valve opening; and  
a cantilevered valve flap comprising a first end attached to the valve body and a second end located opposite from the first end, wherein the first end of the valve flap is attached to the valve body outside of the valve opening, and wherein the valve flap comprises a curvature from the first end to the second end when the valve flap is not attached to the valve body, and further wherein at least a portion of the curvature of the valve flap is at least partially flattened when the valve flap seals the valve opening.

52. (New) The respirator of claim 51, wherein the valve opening is generally planar, and wherein the valve flap curvature biases the valve flap toward the valve opening when the valve flap is attached to the valve body to seal the valve opening.

53. (New) The respirator of claim 51, wherein the valve flap curvature biases the valve flap toward the valve opening to seal the valve opening, and wherein the bias of the valve flap toward the valve opening is sufficient to seal between the valve opening in any orientation of the unidirectional valve.

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54. (New) The respirator of claim 51, wherein the curvature in the valve flap comprises a constant curvature from the first end to the second end.
55. (New) The respirator of claim 51, wherein the curvature in the valve flap varies from the first end to the second end.
56. (New) The respirator of claim 51, wherein the face mask is formed of a filtering material.
57. (New) The respirator of claim 51, wherein the unidirectional valve is an exhalation valve.
58. (New) The respirator of claim 51, wherein the unidirectional valve is an inhalation valve.
59. (New) The respirator of claim 51, wherein the valve flap further comprises a top surface, a bottom surface, at least one support element extending from the top surface of the valve flap, and wherein the at least one support element provides the curvature in the valve flap that is at least partially flattened when the valve flap seals the valve opening.
60. (New) The respirator of claim 51, wherein the valve flap further comprises a top surface, a bottom surface, wherein the valve flap further comprises a plurality of support elements extending from the top surface, wherein each of the plurality of support elements is spaced from each adjacent support element, and wherein the plurality of support elements provide the curvature in the valve flap that is at least partially flattened when the valve flap seals the valve opening.

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61. (New) A respirator comprising:  
a face mask comprising an opening formed therethrough; and  
a unidirectional valve located over the opening in the face mask, the unidirectional valve comprising a cantilevered valve flap comprising a first end attached to the face mask, wherein the cantilevered valve flap extends over the opening, the cantilevered valve flap comprising a curvature from the first end to a second end when the cantilevered valve flap is not attached to the face mask, wherein the curvature of the cantilevered valve flap is at least partially flattened when the valve flap seals the opening in the face mask.
62. (New) The respirator of claim 61, wherein the at least partially flattened curvature of the cantilevered valve flap creates a bias that is substantial enough to keep the cantilevered valve flap sealed over the opening in all orientations.
63. (New) The respirator of claim 61, wherein the curvature of the cantilevered valve flap comprises a constant curvature.
64. (New) The respirator of claim 61, wherein the curvature of the cantilevered valve flap varies from the first end to the second end.
65. (New) The respirator of claim 61, wherein the opening is generally planar such that the curvature of the cantilevered valve flap attached to the face mask over the opening is flattened when the cantilevered valve flap seals the opening in the face mask.
66. (New) The respirator of claim 61, wherein the face mask is formed of a filtering material.
67. (New) The respirator of claim 61, wherein the unidirectional valve is an exhalation valve.

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68. (New) The respirator of claim 61, wherein the unidirectional valve is an inhalation valve.

69. (New) The respirator of claim 61, wherein the cantilevered valve flap further comprises a top surface, a bottom surface, and at least one support element extending from the top surface of the cantilevered valve flap, wherein the at least one support element provides the curvature in the cantilevered valve flap that is at least partially flattened when the cantilevered valve flap seals the opening.

71. (New) The respirator of claim 61, wherein the cantilevered valve flap further comprises a top surface, a bottom surface, wherein the cantilevered valve flap further comprises a plurality of support elements extending from the top surface, wherein each of the plurality of support elements is spaced from each adjacent support element, and wherein the plurality of support elements provide the curvature in the cantilevered valve flap that is at least partially flattened when the cantilevered valve flap seals the valve opening.